

REMARKS

Claims 30-57 are pending in this application.

In the Office Action, claims 30, 37-40, 42-43, 45, 51 and 54 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,980,706 to Bleck et al. Claims 31, 47-50, 52-53, and 56 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bleck et al, as applied to claims 30, 37-40, 42-43, 45, 51, and 54 above, and further in view of U.S. Patent No. 6,033,135 to An et al. Claims 32, 35, and 52-53 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bleck as applied to claims 30, 37-40, 42-43, 45, 51, and 54 above, and further in view of U.S. Patent No. 6,156,125 to Harada et al. Claim 36 stands rejected under 35 U.S.C. 103(a) as unpatentable over Bleck et al as applied to claims 30-31, 37-40, 42-43, 45, 51, and 54 above, and further in view of U.S. Patent No. 5,188,501 to Tomita et al. Claim 44 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bleck et al as applied to claims 30-31, 37-40, 42-43, 45, 51 and 54 above, and further in view of U.S. Patent No. 6,027,602 to Hung et al.

The Applicants note with appreciation the indicated allowability of claims 33-34, 41, 46, 55, and 57 if rewritten in independent form to include the limitations of the base claim and any intervening claims.

The Applicants respectfully disagree that the newly cited reference to Bleck anticipates the present invention or makes obvious the present invention, when combined with the cited secondary references. However, in order to more clearly distinguish the present invention over the cited references, the Applicants have

amended claims 30 and 51 to specifically state that the cover is freely rotatable with the substrate holder, which it is secured to the substrate holder.

The primary reference to Bleck shows a work piece support 401, which both serves for closing a processing bowl 417 and for supporting a semiconductor wafer W within the processing bowl 417. Among other elements, the work piece support 401 includes a processing head 406, which in turn includes a substrate, or wafer, holder. The substrate holder 408 is rotatable within the processing head, in order to rotate the held wafer W therein.

Upon a rotation of the substrate holder, the processing head 406 is stationary. The processing head 406 can be pivoted about an axis 411 to open and close the processing bowl 417. In the closed position, the processing head 406 contacts an edge of the processing bowl 417, and the substrate holder 408 holds the wafer W essentially horizontally within the processing bowl 417.

According to the interpretation contained in the Office Action, the entire work piece support 401 represents a substrate holder according to the present invention. However, this interpretation contradicts the subject matter of the present invention, as defined in claim 30 of the present application, which defines "means for rotating the substrate holder". In contrast, Bleck provides no means for rotating a work piece support 401, which includes a stationary base 405 (see Bleck, column 5, lines 59-67). The work piece support 401, therefore, cannot be viewed as a substrate holder according to the present invention.

not a substrate holder
no means for rotating
the substrate holder
therefore cannot be viewed as a substrate holder

However, the wafer holder 408 of Bleck can be viewed as the substrate holder

defined in claim 30 of the present application. The wafer holder 408 is part of a processing head 406 that at least partially surrounds it; also means for rotating the substrate holder 408 are provided. Thus, merely the wafer holder 408 of Bleck represents a substrate holder, in the sense of the present invention.

In addition, the Examiner states in the Office Action that the processing bowl 417 of Bleck can be considered as a cover, which is securable to the substrate holder. The Applicants respectfully disagree. The processing bowl 417 is not a cover and also is not securable to the substrate, or wafer, holder 408 of Bleck. The processing bowl 417 cannot be viewed as representing a cover, in the sense of the present invention. In addition, the work piece support 401, or a part of this element, also does not represent a cover for the processing bowl 417. Moreover, the processing chamber 417 is not securable in any manner to the substrate holder, as defined in claim 30 of the present application.

According to the present invention, the word "securable" means that a fixed connection between a cover and a substrate is made. In this manner, the two elements form together a sealed chamber and the cover is rotated jointly with the substrate holder when the substrate holder is rotated. Claim 30 clearly defines that the cover is "securable" to the substrate holder and that when the cover is secured to the substrate holder, a sealed chamber is formed for receiving the substrate. It is inherent and would be obvious to one skilled in the art, that if the cover is secured to the substrate holder in a manner that creates a "sealed chamber", the cover would obviously rotate along with the substrate holder.

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In contrast, with Bleck, the processing bowl 417 does not represent a cover. Indeed, if the processing bowl 415 were designed as a cover, it would not be securable to the substrate holder, that is, to the rotatable wafer holder 408. In addition, a part of the non-rotatable processing head 406, which supports the rotatable wafer holder 408, rests on an edge of the processing chamber 417. In particular, however, no attachment is provided between the processing bowl 417 and the rotatable wafer holder 408. Furthermore, the rotatable wafer holder 408 extends into the processing chamber in order to rotatably hold a wafer within the "stationary" processing bowl 417. Thus, the substrate holder 408 and the processing bowl 417 also do not form a sealed chamber, as defined in claim 30 of the present application.

In addition, the processing chamber 417 of Bleck remains stationary when the wafer holder 408 rotates, which in turn suggests that the processing chamber 417 is not secured to the wafer holder 408.

According to the present invention, as disclosed on page 3 of the specification, a cover is secured to a rotatable substrate holder, in order to define defined ambient conditions for the substrate between the substrate holder and the cover. In particular, a static region is formed within the chamber, such that the gases located therein rotate commonly with the substrate holder and the cover mounted thereon. From this fact, it is clear that the fixing of the cover to the substrate holder implies that the cover rotates with the substrate holder when the cover is secured thereto. This is necessary in order to form the above-described static region.

With Bleck, no such static region is formed, since a wafer is rotatably held by the

wafer holder 408 in the processing bowl 417, which remains stationary. Thus, a relative movement between the wafer and the chamber walls occurs, which causes the turbulence mentioned on page 3 of the specification of the present application.

This turbulence can be prevented, however, by securing a cover to the substrate holder, as with the present invention.

Again, to more clearly state the feature that the cover is rotatable with the substrate holder when the cover is secured thereto, the Applicants have amended claims 30 and 51 to add this limitation. The Applicants respectfully submit that these amendments do not raise "new issue" or "new matter" issues, since, as explained in detail above, it is clear from the claims and specification that the cover is secured to the substrate holder to form a sealed chamber, and therefore, would have to be rotatable with the holder when in this secured position. The amendments to claims 30 and 51 only define this inherent feature more clearly.

Therefore, the Applicants respectfully submit that claims 30-32, 35-40, 42-45, 47-54, and 56 are indeed patentable over the cited reference to Bleck. Like Bleck, none of the references cited in combination with Bleck show or suggest a cover that is securable to the substrate holder to form a sealed chamber ^{while} AND which can be rotated freely with the substrate holder.

The Applicants therefore respectfully request withdrawal of the rejections under 35 U.S.C. 102 and 103 and reconsideration of the claims as herein amended.

In view of the foregoing discussion, Applicants respectfully request reconsideration of the allowability of all of claims 30 – 57 of the instant application. In

addition, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone interview in order to discuss any outstanding issues and to expedite placement of the application into condition for allowance.

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read "Robert W. Becker".

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